



SURVEY OF PAKISTAN Rawalpindi

INVITATION TO BID

Survey of Pakistan, a National Surveying & Mapping Agency invites sealed bids under the Project titled “Reforming and Modernization of Cadastre of cities (Karachi, Lahore and Islamabad) and State Lands in Pakistan” under **Single Stage-Two Envelop procedure** from the Original manufacturers / authorized distributors / suppliers / contractors etc., registered with Income Tax & Sales Tax Departments for supply of following items:

Sr. #	Equipment	Qty	Closing Date
1.	GNSS RTK	10 Sets	20-01-2021
2.	Total Station	3	
3.	Digital Tablets	30	
4.	Photogrammetric Work Station	5	
5.	Workstations/Computers	70	
6.	Laptop	10	

2). Bidding documents, containing detailed terms and conditions, technical specifications, method of procurement, procedure for submission of bids, bid security, bid validity, opening of bid, evaluation criteria, performance guarantee etc., are available for the interested bidders at website of Public Procurement Regulatory Authority, which can be downloaded.

3). The bids, prepared in accordance with the instructions in the bidding documents, must reach at Survey of Pakistan, Faizabad, Rawalpindi duly addressed to the Chairman Purchase Committee on or before **20-01-2021 at 10:30 hrs.** Bids will be opened on the same day at **11:00 hrs.** This advertisement/Biding Document available on PPRA’s website at www.ppra.org.pk and Survey of Pakistan website www.sop.gov.pk.

(Muhammad Tanvir)
Director
Directorate of Photogrammetry
Chairman Purchase Committee
051-9290217

TERMS & CONDITIONS

1. Applications on prescribed form (attached) along with technical specifications (compliance sheet) and contract, which can be downloaded from the website of PPRA, should reach the Chairman Purchase Committee, Director of Photogrammetry, Survey of Pakistan, Faizabad, Rawalpindi by registered post/courier latest by 10:30 hours on 20-01-2021. These will be opened at 11:00 hours on the same day in the presence of bidders or their authorized representatives.
2. The method of procurement is **single stage – two envelopes** as per PPRA's Rule-36(b).
3. The Bidders will send their Proposals in two sealed envelopes, marked as "FINANCIAL PROPOSAL" & "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion. Initially, only envelopes marked as **Technical Proposal** shall be opened and envelopes marked as Financial Proposal shall be retained in the custody of Chairman Purchase Committee. After the **evaluation & recommendations by the concerned Technical Evaluation Committee**, Financial Proposals of only technically qualified bids will be opened. The Financial Proposals of bids found technically non-responsive shall be returned un-opened to the respective bidders.
4. 2% earnest money in shape of pay order/bank draft in the name of Chairman Purchase Committee, Director of Photogrammetry, Survey of Pakistan, Faizabad, Rawalpindi should be enclosed in the envelope containing Financial Bid. However, the certificate for attachment be indicated in technical bid, otherwise, the same will be rejected at the opening stage of technical bids.
5. Bidder will provide compliance sheet of each item of the equipment against specifications. Bidder response should be explicit for each component. Any ambiguous and implicit words in quotations (such as yes, ok, offered, available, provided, etc.) will be treated as 'non-responsive'.
6. Bidder shall not submit any document after due date except in response to any clarification sought by Project Director and in response to clarifications no change shall be made.
7. The firm/supplier interested in more than one item may furnish separate tender for each item.
8. Procuring agency may reject any or all bids subject to the relevant provisions of PPRA Rules-33.
9. **Quantity of items can be increased or decreased.**
10. Only registered suppliers who are on Active Tax Payers List (ATL) of FBR are eligible to supply goods. The supplier should attach a proof that he is on ATL of FBR Data Base.

11. In Financial Proposal, the prices should be inclusive of all leviable taxes. The bidders should also provide the detail price analysis of the items/accessories in their Financial Proposal along with net quoted unit rate with GST and without GST showing complete picture of their quoted prices. Prices should be mentioned both in words & figures. In case of difference the amount given in words will be accepted.
12. Bids will be valid for 120 days from the date of opening of bid.
13. Display of the items/equipment & Software must be in English Version.
14. The bidders have to give demo of their offered model during Technical Evaluation.
15. Successful bidder(s) will be required to execute agreement governing the terms & conditions of the contract.
16. The successful bidder shall be liable to give full/justifiable training of their approved model.
17. **Liquidation Damages:** The firm has to pay liquidation damages for the period of delays in supply of deliverables upto rate of 2% of the contract price per month or part of a month exceeding the original delivery period subject to the provision that total liquidation damages thus levied will not exceed 10% of the total contract price.
18. **Performance Guarantee:** The bidder shall provide to Survey of Pakistan (SoP), a Performance Guarantee issued by A-Plus Pakistani Scheduled Bank, having a value of 10% of the contract price and which is valid for 12 months beyond the expected date of delivery of the items/equipments. SoP shall confirm the authenticity / genuineness of the Bank Guarantee from the concerned Bank. Performance Guarantee shall be submitted just after successful submission of deliverables and after obtaining Acceptance letter from SoP. 10% performance guarantee will remain held with SoP and be released on expiry of Support Period.
 - a. Bank Guarantee furnished against this contract is un-conditional and en-cashable at the will of the firm. Firm will undertake not to hinder/restrain its encashment through court, extra judicial or any other way(including administrative process)
 - b. If the firm fails to produce the Bank Guarantee within specified period, SoP reserves the right of cancelling the contract at the risk and expense of the firm. In the event of un-satisfactory performance or of any breach of terms of the contract, the bank guarantee shall be forfeited to the govt at the discretion of the firm.
19. **Confidentiality:** The firm shall not, during the process of execution or after expiration of this contract, disclose any proprietary or data without the prior written consent of SoP.
20. **Force Majeure:** Both the parties shall not be held responsible for any delay occurring in the Project due to event of Force Majeure such as acts of God, War, Civil commotion, Strike, Lockouts, Act of Foreign Govt and its agencies and disturbance directly affecting the parties over the events or circumstances

where both the parties have no control. In such an event both parties will inform each other within 15 days of the happening and within the same timeframe about the discontinuation of such circumstances / happening in writing.

21. The bidder shall be responsible for provision of all accessories to make the items operational.
22. Every page of the original proposal documents should be signed and stamped by the bidder and proposal to be submitted in binded form otherwise bid will not be accepted.
23. Any firm, which furnishes wrong information, will be liable for legal proceeding. Any contract awarded in such case when find out, will be cancelled.
24. The bidder/lead should not be blacklisted by any of its clients. An affidavit to this affect must be submitted by the bidder.
25. The bidder/lead should not be blacklisted by any of its clients. An affidavit to this affect must be submitted by the bidder
26. **Litigation:** In case any dispute, only court of law at Rawalpindi have jurisdiction to decide the matter.
27. For more information, please contact Mr. Muhammad Asghar, at telephone No. 051-9290227.

EVALUATION CRITERIA

1. **Technical Evaluation:** Technical Evaluation Reports of the Technical Proposals will be made as per tender specifications without the reference to the price as per PPRA Rule 36 (b)(v). The Technical proposal evaluation committee will evaluate the technical proposals and qualifications.
 - i. Evaluation Criteria for Technical Evaluation of GNSS RTK & Total Station.
 - 100% Compliance of each sub-item of Tender Specifications as mentioned in Form-A will be required.
 - If the firm qualifies 100% compliance on the basis of Form-A (attached with tender document), the firm has to demonstrate the performance to evaluate the user interface, quality, OEM/ Authorized Agent Experience of the firm, Availability of after sale services/workshop and performance of the equipment.
 - On the basis of form-B (attached), the bidder obtaining 70 or more marks will be technically qualified.
 - ii. Evaluation Criteria for Technical Evaluation of Equipments (Digital Tablets, Photogrammetric Workstations, Computers and Laptop).

- 100% Compliance of each sub-item of Tender Specifications as mentioned in Form-A will be required.
- If the firm qualifies 100% compliance on the basis of Form-A (attached with tender document), the firm has to demonstrate the performance to evaluate OEM/ Authorized Agent Experience of the firm, Availability of after sale services/workshop and Brand performance.
- On the basis of form-B (attached), the bidder obtaining 70 or more marks will be technically qualified.

iii. Performa A & B for technical evaluation of each item are attached.

2. Evaluation of Financial Proposals / Bids

- a. Only the Financial Proposals of those bidders will be opened publically who's Technical Proposals and qualifications have been recommended by the Technical Evaluation Committee of the department as per PPRA Rule. For financial evaluation, the total cost indicated in the Financial Proposal will be considered.
- b. The Purchase Committee will determine whether the Financial Proposals are complete. The cost indicated in the Financial Proposal shall be deemed as final and reflecting the total cost of the equipment. Omissions, if any, in costing any item shall not entitle the firm to be compensated and the liability to fulfill its obligations within the total quoted price shall be that of the Vendor. The lowest Financial Proposal will be considered as the most advantageous bid.
- c. According to PPRA Rule 38-A, the bidder may offer un-conditional discount, in percentage of their quoted price or bids, before opening of the financial proposal. The discount bid price shall be considered as original bid for evaluation being an integral part of the bid. No offer of discount shall be considered after the bids are opened. The bidder will offer discount in term of percentage of financial bid in writing on Firm letterhead. **The bidder may not forget to bring Firm letterhead on the day and time of opening of Financial Bid.**

RESPONSIBILITY AGAINST DAMAGES/OWNERSHIP OF EQUIPMENT

The bidder shall be responsible for whole/any damage caused to the item(s)/equipment by accident / improper handling / loading, un-loading, before handed over to / taking charge by SoP. The bidder shall replace the same.

PAYMENT:

- i. Payment shall not be made in advance and against partial deliveries.
- ii. The bidder shall provide necessary and supporting documents alongwith invoice.

- iii. The bidder shall submit an application for payment to the Project Director Survey of Pakistan Rawalpindi. The application shall be accompanied by such invoices, receipt or other documentary evidences as SoP require, state the amount claimed and particulars of items supplied/equipment up to the date of application for payment.
- iv. SoP shall get verified the details of items delivered. Payment shall be made on complete delivery of items/services after issuance of satisfactory certificate by concerned technical committee/Project Director.
- v. SoP shall make payment for items supplied/services provided to the bidder as per Govt. policy in Pak Rupees through crossed Cheque.
- vi. All payment shall be subject to any and all taxes, duties and levies applicable under the laws of Pakistan for the whole period starting from issuance of Supply Order till delivery of the items/services.

SUPPLY PERIOD:

- i. The firm will provide items within a period of two months of the tender.
- ii. The most advantageous bidding firm/vendor shall be responsible to deliver goods/services within due time as given in Supply Order/Tender document.

AGREEMENT DEED

After receiving work order/supply order the firm has to sign a formal agreement deed on a stamp paper of appropriate value as per attached sample.

CONTRACT AGREEMENT

GOVERNMENT OF PAKSITAN
(MINISTRY OF DEFENCE)
SURVEY OF PAKISTAN
RAWALPINDI

Contract No. /15-G-4/()/St, dated: - -2021

Refers Supplier's Tender No.

An agreement made the _____ day of ----- Two Thousand Twenty between the President of Pakistan (herein after called the "PURCHASER" on the one part and M/s. -----, "SUPPLIER" on the other part.

Whereby it is agreed that the Purchaser shall purchase and the Supplier shall sell the stores as described in the schedule given hereunder at the price mentioned

therein already transmitted through letter of intent subject to the special conditions as follow:

SUPPLY SCHEDULE

Description of Stores	Qty/ (Units)	Bill in name of	Rate per unit (Rs.)	Total Cost (Rs.)	Delivery Date
		Project Director, Survey of Pakistan Rawalpindi			On or before
Total:					

WARNING: Any information about the sale/purchase of the stores under this contract shall not be communicated to any person, other than the manufacturer of the stores or to any press or agency not authorized by the Surveyor General of Pakistan/Ministry of Defence to receive it. The breach of the undertaking shall be punishable under the Official Secrets Act, 1923

CONTRACT CONDITIONS/CLAUSES:

- | | |
|--|---|
| 1). Name of consignee: | Project Director, Survey of Pakistan Rawalpindi. |
| 2). Cost Dubitable to Head: | A0900-Physical Assets. |
| 3). Supplier's Name and Address: | M/s. |
| 4). Supplier's NTN No. | |
| 5). Supplier's Sales Tax Reg. No: | |
| 6). Date of Delivery: | |
| 7). Maker's Name & Brand: | |
| 8). Dispatch Instructions: | The stores will be dispatched to the consignee under firm's own arrangements. No part supply will be allowed in any case. Each item will be packed/marked as per relevant paper's particulars governing the supply of store/standard/trade marking worthy of transportation by Rail/Road/Air within Pakistan so as to ensure their safe arrival at ultimate destination without any loss or damaging. |
| 9). Packing & Marking Instructions: | |

- 10). **Inspection:**
- a) Inspection Authority: **Technical Evaluation Committees (TECs)**
 - b) Inspection Officer: **Chairman Technical Evaluation Committees**
 - c) Place of Inspection: **Consignee's Premises**
 - d) The Inspecting Officer will be informed 02 working days in advance about the time for inspection
- 11). **Checking of Stores at Consignee's End:** All stores will be checked at consignee's premises in the presence of supplier's representatives. If, for the reasons of economy or other the supplier decides not to nominate his representative for such checking, then advance written notice to this effect will be given by the supplier to the **Project Director, Survey of Pakistan Rawalpindi** under intimation to **CPC** prior to or immediately on delivering stores. In such an event, the supplier will clearly under take the decision of consignee with regard to quantities and description of a consignment, which will be taken as final and if any discrepancy found will according be made up by the supplier.
- 12). **Terms of Payment:**
- a) 100% payment of value of the stores supplied will be paid to M/s. -----
-----, through Cheque by submission of bills duly supported by the **NOC** from concerned **TEC**
 - b) Bill will be furnished to the Project Director, SoP, Rawalpindi, which will subsequently be submitted to AGPR, Islamabad by the consignee.
- 13). **Taxes & Duties:**
- a) **Duties & Taxes Applicable:** The prices quoted are inclusive of all kinds of duties and taxes. The purchaser shall not be liable for reimbursement of duties and taxes on the contracted goods other than those given in the quoted rates. The payment of element of taxes and duties, which are included in quoted rates, will be made to the supplier only after production of duly authenticated documentary proof of its payment to the respective department. In case fresh taxes and duties are levied by the government after opening of the tender will signing of the contract and during the currency of the contract 9i.e. within the original delivery period) or if the existing rates of taxes are increased after opening of the tender and during the currency of the contract, liability shall be of the purchaser and the same shall be reimbursed by the AGPR, Islamabad to the supplier at actual, on production of documentary proof of his payment duly authenticated. In case of any subsequent decrease in existing or future duty or taxes by the Govt. after opening of tender and during the currency of the contract the liability shall be of the supplier and the supplier shall reimburse the same to AGPR, Islamabad under intimation to purchaser.
 - b) For release of payment, the supplier would be required to furnish the following documents to **Project Director**.
 - i Proof of registration with Sales Tax Department (Copy of

Registration Certificate).

Sales Tax Invoice in original showing description/quantity/value of good and current amount of Sales Tax leviable thereon.

ii

14). **Bank Guarantee Clause:**

- a) To ensure timely and correct supply of stores and smooth execution of warrantee conditions the firm will furnish a bank guarantee/draft from a schedule bank for an amount of 5% of the total value of the contracted stores amounting to **Rs. -----** to **CPC**. After completion of warrantee period i.e. 01 years from the date of signing of NOC by **PC** the supplier will request the **CPC** through **Project Director** for the withdrawal of bank guarantee/draft. The bank draft will be encased/deposited in SoP's bank account. The bank draft shall be produced by the supplier within 07 days from the date of issue of letter of intent/signing of contract deed and shall remain in force till completion of the warrantee period beyond the date of inspection.
- b) If the supplier fails to produce the bank guarantee/draft within the specified period, the Project Director reserves the right of canceling the contract at the risk and expense of the supplier. In the event of un-satisfactory performance or of any breach of terms of the contract, the bank guarantee/draft shall be forfeited to the government at the discretion of the purchaser. On satisfactory performance of the contract the bank guarantee/draft will be returned to the supplier by CPC, on receipt of clearance from the Consignee.
Bank guarantee/draft furnished against this contract is un-conditional and en-cashable at the will of purchaser. Supplier undertakes not to
- c) hinder/restrain its encashment through court, extra judicial or any other way (including administrative process).

15). **Supplier Warranty/Guarantee:**

- a) The supplier shall furnish warranty for the stores under supply against defects in material workmanship, and satisfactory performance for one year with parts and one year free service. The stores will be of the highest grade and consistent with general expectable standard for the stores of type ordered in full conformity with governing specifications and performance of stores with the liability of replacing defective/unacceptable part free of cost within **07 days** by the supplier on receiving the discrepancy report, failing which the purchaser shall have the right to purchase the stores (against the stores declared defective) at the suppliers risk and expense. The supplier also undertakes to make good the deficiency in supply, if any.
- b) Supplier's warranty shall be provided to the consignee along with the store.

- 16). **Inspection after Expiry of Delivery Period:** Unless informed and directed to the contrary during the currency of the contract, the Inspection Officer will continue the inspection of the stores at firm's risk even after expiry of delivery period. Such acceptance will not prejudice the purchaser's right to cancel the contract or to extend the delivery period with or without liquidated damages.
- 17). **Failure and Termination:** Should the supplier fail to deliver the stores within stipulated period of supply, on the expiry; the purchaser shall be entitled at his option to take either of the following actions:
- a) To cancel the contract or purchase from elsewhere the stores not delivered, at risk and expense of the supplier and without notice to him. The supplier shall also be liable to any loss which purchaser sustains on this account but shall not be entitled to any gain of repurchase.
 - b) To make the supplier pay liquidation damages for the period of delays in supply up to the rate of **2%** of the contract value un-supplied stores per month or part of a month for the period exceeding the original delivery period subject to the provision that total liquidation damages thus levied will not exceed **10%** of the total contract value.
 - c) If contract of the firm is cancelled at 'Risk and Expense' then the latest equivalent of their cancelled stores will be purchased at 'Risk and Expense' of the concerned firm if the cancelled type/category is not available in the market. Similarly an item of contract on FOR (indigenous) basis may be produced at risk and expenses of the firm on FOR (Imported) basis and vice-versa in the interest of the state.
- 18). **Force Majeure:** Force Majeure shall mean any event, act or other circumstances, not being an event, act or circumstance, under the control of the purchaser or of the supplier. Non-availability of raw material from the manufacturer of stores, or of export permit for the export of the contracted stores from the country of its origin, shall not constitute Force Majeure.
- 19). **Special Instructions:**
Warranty/Guarantee:
- a) The supplier has to provide warranty/guarantee of the stores supplied for a period of 01 year standard warrantee including repair, servicing and replacement of parts from the date of issuance of NOC by the **CPC** The supplier shall replace the defective stores free of cost. Warranty/Guarantee Certificate with regards to all items being supplied would be provided to the consignee along-with the stores.
 - b) Trade mark of all items should be quoted clearly. On receipt, if any stores are found to be otherwise it will be changed/ replaced free of cost.
 - c) The Supplier will be strictly bound to supply the contracted stores as per tendered specifications, and fulfill all responsibilities in this regard.
- 20). **Litigation:** In case of any dispute, only court of jurisdiction at Rawalpindi shall have the jurisdiction to decide the matter.

SIGNATURES

PURCHASER

Designation	Chairman Purchase Committee
Name	
Signature	
For and on behalf of the President of Islamic Republic of Pakistan.	

SUPPLIER

Name	
Designation	
Signature	

PRESCRIBED APPLICATION FORM FOR TENDERING OF PROCUREMENT OF EQUIPMENT

(To be printed on firm/supplier's letter head duly signed by the authorized representative)

The Chairman Purchase Committee,
Director of Photogrammetry,
Survey of Pakistan, Faizabad,
Rawalpindi

In response to press advertisement dated: - -2021 appeared in the daily
..... we M/s.
..... have downloaded Tender Documents
consisting of Contract Proforma for Tendering under Purchase of stores including the
detail and specifications from PPRA's website.

We have gone through all the terms and conditions contained in above mentioned documents and those, which are the part of tender.

We fully agree to abide by the terms and conditions contained in the said documents and therefore hereby submit Technical as well as Financial Proposals for the following:

**AUTHORISED SIGNATURE
NAME & SEAL OF FIRM/SUPPLIER**

TECHNICAL SPECIFICATIONS FOR GNSS-RTK EQUIPMENT

GNSS Set (01 BASE & 03 ROVERS COMBINATION)

LIST OF ITEMS

1. Base receiver	01
2. Rovers receiver	03
3. Rugged Digital Tablet Controllers	04
4. Post Processing Software (Full package)	01
5. 35W external Radio + High Gain 5 DB Antenna	01
6. Tribrach with removable optical plummet	04
7. Imported heavy duty branded wooden/Fibre glass Tripods	04
8. Heavy duty branded receiver poles (2.0 m) with canvas cover / bags	04
9. Extension rods	04
10. Bipod / pole catcher	04
11. External Dry Battery	01
12. Spare Batteries for tablet	04
13. All other standard accessories with article number of same brand (i.e batteries, chargers, set of cables, measuring taps and carrying cases etc)	

Note: Each Base and Rover Receiver must be compatible to be used both as base and rover.

SPECIFICATIONS OF BASE & ROVER RECEIVER

- Triple Frequency GNSS
- Fast Acquisition
- Strong Signal
- Low noise and excellent tracking to low satellite and in adverse conditions
- Fully Independent measurement
- L- Band
- Operation Mode : Each receiver must be capable to operate as base, rover & log static data
- Multi Constellation: Satellite Tracked: GPS, GLONASS, BEIDOU, GALILEO, QZSS, SBAS
- WEB UI Control
- Intelligent Batteries
- Rugged RTK

- Channels more than 440
- Internal Memory: 6GB-8GB
- Initialization Time: less than 10 sec

- **Accuracy**

- Static and Fast Static mode

- Horizontal: 3.0 mm +0.1 ppm

- Vertical: 3.5 mm + 0.4 ppm

- Real Time Kinematics

- Horizontal: 8.0 mm+1.0 ppm

- Vertical: 15.0 mm+1.0 ppm

- Data Update/ Output Rate >10 Hz (20 Hz will be preferred)
- Accuracy with TILT Compensation: RTK, TILT Compensated 15° IMU + E
Compass

- **Advance communication**

- Radio accessories must be approved by PTA.
- Cellular GSM (NTRIP CASTER), 4G
- Communication: 7 pins and 5 pins interfaces, USB Interface
- Bluetooth Technology
- Wi-Fi
- GSM Network (PTA Approved)
- Internal UHF Radio
- Internal Radio: 1.0-2.0 watt, TX- RX Type
- Frequency Range: 410-470 Mhz
- Band: GSM/GPRS/EDGE/LETE/UMTS/WCDMA
- Battery :3400 mAh
- Operating Temperature -40 to +65 C
- Water Proof / Dust Proof
- Shock Resistance

ADDITIONAL ACCESSORIES FOR BASE

- a. One set of all cables of base Receiver.
- b. One Battery set of Base Receiver.
- c. One set of Base UHF Antenna.

ADDITIONAL ACCESSORIES FOR ROVER

- a. One set of all cables of rover receiver.
- b. One battery set of rover receiver.
- c. One set of rover UHF antenna.

SPECIFICATION OF CONTROLLER WITH FIELD SOFTWARE

- Rugged Digital Tablet Controller
- Interactive CAD function which can do simple Draw, Edit, Manage field data without the needs to use office CAD software.
- Able to work with 4x different view mode: Classic 2D, 3D with Elevation, Map View (i.e Google Map as background), able to support Raster Image (Tiff, JPG, Bitmap).
- Can Import directly the following format into field controller : DXF/DWG file, ASCII file, ESRI Shapefile, LandXML format, Raster Image, BIM IFC file, GSI format, Google KML/KMZ format (export
- Can Export directly the following format to PC: DXF/DWG file, ASCII file, ESRI Shapefile, LandXML format, GSI format, Google KML/KMZ format, STARNET format, 12D format, LSS DTM format
- Generate Stakeout report directly from the field software
- Online data sharing capability: WhatsApp, Dropbox, Google Drive, Email, Skype etc (no physical hard drive needed for data transfer)
- Faster QC and checking purpose between Field and office to avoid error and repetitive work.
- RTK Correction
- Gyroscope, electronic Compass, Accelerometer, Electronic Bubble, GSM, Bluetooth, Wi-Fi
- Digital Compass
- Not less than 8 MP Embedded Camera
- Operating Software: Windows / Android
- Radio configuration: Add, Delete and Edit of Radio frequencies in field via Field controller
- Transformation Calculator: Field software capability to compute new transformation parameters
- Processor: not less than 1.1 GZ Intel Atom

- RAM: Greater than 2 GB
- ROM : Not less than 8 GB
- Interface: TF Slot, USB,GSM,
- Display: not less than 7” capacitive touch panel, sunlight-viewable.

FEATURES OF SOFTWARE

- **Data processing software**

Latest version user friendly full module comprehensive software with permanent license.

- **Specifications**

- a. Having utility for post processing data.
- b. Import & export all GPS data.
- c. Import and export RINEX, ASCII, CAD (DWG, DXF), GIS (.Shp File).
- d. Data error and accuracy reporting.
- e. Datum shift calculation.
- f. Downloading and processing adjustment
- g. Software must be capable of GNSS, Total Station and level data processing and adjustment and all functions should be operational with complete license.
- h. Image Processing Modules enable you to process images and generate point clouds and 3D surfaces quickly and accurately.
- i. For tasks like measuring a complex building, the modules allow you to process mixed photos, aerial and terrestrial simultaneously, in a single step, to achieve best results in highest quality.
- j. The results are fully integrated into the main applications enabling to create final drawings, maps and surfaces.
- k. Specific drawing utilities such as the Solid Orthophoto view and the possibility to select the coordinates in the original photos, ensure to get the most out of the calculated results.

Processing GNSS Multi frequency data processing of GNSS static and kinematic observation

Functionality	GNSS data analysis tools for viewing cycle slips, SNR, and residual plots with statistics Reference networks connectivity for direct RINEX download
Adjustments	Network adjustments – free or constrained network computations of all observations Full 3D, 2D and 1D computations and ability to combine GNSS, Total Station and Level data Compare / manage network runs before storing the best possible set of consistent coordinates
Reports	Automated generation of GNSS Observation Report, GNSS Interval report, Coordinate System Report, Data Quality Report, GNSS Field data reports, processing result Report, Adjustment Report, Loops and Misclosure Report
Data Formats	GNSS Raw Data, ASCII, XML, DWG, DXF, BIM ICF, Esri SHP, SP3, ION, GSI, LAS, PTS, PTX, XYZ, LAZ, PLY, e57, RINEX, SDB and Georeferenced Images (JPG, PNG)
Google Earth Support	Support for data export to Google earth with point, lines, polygon, with point observation quality info, time info and baseline diagram.
Data editing feature	Update of station setups / base setup support for auto correction of target / rover points
Data Import	ASCII, XML, RINEX, DXF/DWG, SHP, PTS/PTX, PLY, e57, LAS/LAZ, IFC, IFCZIP, ifcXML
Data Export	ASCII, XML, RINEX, DXF/DWG, SHP, KML/KMZ, PTS, e57, LAS/LAZ
Traverse Adjustment	Build or edit field generated results and automatically update connected measurements

- **Training**

Training for operation and preventive maintenance of equipment (Hardware and software) for 02 weeks free of charge.

- **Warranty**

One year after commission on site, defective parts/assemblies will be replaced by the bidder free of charge within warranty period

- **Terms & Conditions**

1. Bid from the original manufacturer (OEM) or his Authorize Agent of the GNSS RTK sets will be considered for technical evaluation.
2. OEM (Original Equipment Manufacturer) must have reasonable experience of manufacturing GNSS instrument. Any sale contract / document to be provided as proof.
3. E-mail, telephone, fax No. and address of workshop to be provided with technical bid for confirmation during technical evaluation. Evaluation team may inspect workshop.
4. The bidder must provide OEM certificate of main equipment, technical specifications, brochures and drawings of each item in schedule of requirement of quoted model in English.
5. All bidders are advised to comply strictly with the tender specifications and no deviation shall be allowed.
6. The system must be based on latest design (Hardware & Software), model and technology.
7. Before opening of financial tender, bidder will be responsible for on ground practical demonstration of the quoted instruments along with all accessories in Survey of Pakistan headquarters Rawalpindi, Pakistan. The performance and quality will be technically evaluated by concerned technical evaluation committee of Survey of Pakistan as per tender specifications.

Note:

Proforma A & B for Evaluation are attached

TECHNICAL SPECIFICATIONS FOR TOTAL STATION

TENDER SPECIFICATIONS

TELESCOPE

- | | |
|--------------------|-------------------|
| a. Image | Erect |
| b. Magnification | 30X |
| c. Field of View | 1° 30'-1° 25' |
| d. Focusing Range | 2.0 m to infinity |
| e. Resolving Power | ≤ 3" |

ANGLE MEASUREMENT

- | | |
|-----------------------------|--------------|
| a. Tilt compensation method | dual axis |
| b. Tilt compensation range | ≥3" |
| c. Angle accuracy | ≤2" |
| d. Displayed resolution | less than 1" |

DISTANCE MEASUREMENT

- | | |
|----------------------------|--|
| a. Range with reflector | ≥5000m with 1 prism |
| B. Range without reflector | 600-800m |
| c. EDM accuracy | ≤ (2mm+ 2ppm) of distance |
| d. Measuring time | Fine: ≤ 1.0s (initial 1.5s)
Rapid: ≤ 0.6s (Initial 1.3s)
Tracking: ≤ 0.4s (Initial 1.3s) |

OPTICAL PLUMMET

- | | |
|-------------------|---|
| a. Magnification | ≥2.2x |
| b. Focusing Range | 0.5m to infinity |
| c. Level | Plate/tubular Bubble Vial 30 seconds per division/ (2 mm)
Circular Bubble Vial 10 minutes per division/ (2 mm) |
| d. Laser | Red laser Diode, Beam Accuracy ≤ 1.0mm @ 1.3m |

KEYBOARD AND DISPLAY

- | | |
|---------------------------|------------------------------------|
| a. Control Panel Location | On Dual face |
| b. Display | Dual Coloured Touch Screen display |
| c. Graphics | 320x240 pixels (Q VGA) |
| d. Interface | windows |

- m. cover of durable plastic
- n. Shock absorbing carrying case with shoulder strap etc in complete
- o. Heavy duty wooden tripod/Fibre glass 01
- p. Bipod/Catcher for prism pole Aluminium 02
- q. Canvas Covers / Bags For Total Station Box, Tripod, Prism, Prism pole, Bipod

DATA STORAGE

- a. Capacity ≥50,000 points on board
- b. Data formats GSI/DXF/LANXML/CSV/user definable
ASCII formats
- c. Interface USB, Serial

FOCUSING MODE

Manual focus mode

PHYSICAL

- a. Weight ≤10 kg
- b. Temperature range ≤0° C to ≥50° C fully operational
- c. Humidity 0 to ≥90% RH
- d. Protection splash waterproof dustproof

POWER

- a. Batteries LI-ion rechargeable Dual battery slots for protecting memory during changing of batteries
- c. Capacity Continuous angle-only measurement: 12 h
Distance/angle measurement/ AF every 30 s
- d. Recharge time 6 hours

TRAINING

Training for operation and preventive maintenance of equipment (Hardware and software) for 02 weeks free of charge.

WARRANTY

One year after commission on site, defective parts/assemblies will be replaced by the bidder free of charge within warranty period

Terms & Conditions

1. Bid from the original manufacturer (OEM) or his Authorize Agent of the Total Station will be considered for technical evaluation.
2. OEM (Original Equipment Manufacturer) must have reasonable experience of manufacturing Total Station instrument. Any sale contract / document to be provided as proof.
3. E-mail, telephone, fax No. and address of workshop to be provided with technical bid for confirmation during technical evaluation. Evaluation team may inspect workshop.
4. The bidder must provide OEM certificate of main equipment, technical specifications, brochures and drawings of each item in schedule of requirement of quoted model in English.
5. All bidders are advised to comply strictly with the tender specifications and no deviation shall be allowed.
6. The system must be based on latest design (Hardware & Software), model and technology.
7. Before opening of financial tender, bidder will be responsible for on ground practical demonstration of the quoted instruments along with all accessories in Survey of Pakistan headquarters Rawalpindi, Pakistan. The performance and quality will be technically evaluated by technical committee of SOP as per tender specifications.

TECHNICAL SPECIFICATIONS FOR DIGITAL TABLETs

SI #	Description of Peripherals	Specifications	Compliance
1.	Brand	GETAC / Panasonic /Sony /Samsung/Dell/HP	
2.	Processor	Intel® Core™ i7-8565U Processor 1.8GHz Max. 4.6GHz with Intel® Turbo Boost Technology 8MB Intel® Smart Cache	
3.	Operating System	Windows latest version	
4.	Sound	2 x Rear-Facing Speakers, Dolby® Atmos™, Micro USB / Audio Jack	
5.	Memory	RAM: 8 GB or more.	
		Internal Storage: 512 GB, SSD	
		Card Slot: UHS-II or above	
6.	Battery	Type: Min Li-ion 7000 mAh or above, Embedded, Standby Time: Up to 117 Days Usage Time: Up to 10 Hours	
7.	Power Device	Normal Voltage AC 120/230 v Frequency Required 50/60 Hz	
8.	Display	11.6" IPS TFT LCD FHD (1920 x 1080) 800nits Lumi Bond® display with Getac sunlight readable technology Capacitive multi-touch screen	
9.	SIM	Type: Micro Sim Card (LTE SKU only)	
		Slots: Single	
10.	Communications	Intel Gigabit Ethernet controllers	
11.	4G Network	PRC: B1/3/40/41	
		ROW: B1/3/7/8/20	
12.	4 & 3G Network	UMTS: B1/2/5/8	
13.	2G Network	GSM : B2/3/5/8	
14.	WLAN	2.4 GHz 802.11 b/g/n	
15.	Bluetooth®	Bluetooth® 4.0	
16.	NFC	yes	
17.	FM Receiver	Standard	
18.	GPS Support	Max Satellite connectivity for maximum accuracy	
19.	3.5 mm Audio Jack	Standard	
20.	Integrated Camera	Rear: 13 MP full HD 1080p60fps Auto-focus	
		Front: 5 MP Fixed-focus	
21.	Sensors	G-Sensor	
		Vibration	

22.	Accessories	Pen, Extra battery for Power backup, Car charger, Cover, screen protector	
23.	Protection	Shock and water proof	
24.	Warranty	03 years on site comprehensive	
25.	Dealership	Authorized Dealership Gold / Higher with manufactural authorization letter	

Note: Faulty Hard drives will not be return during warranty period.

TECHNICAL SPECIFICATIONS PHOTOGRAMMETRIC WORKSTATION
(Photogrammetric Data Processing)

SI #	Functions / Peripherals	Specifications	Compliance
1.	Brand	HP/DELL/Lenovo /IBM or equivalent	
2.	Processor	2xIntel® Xeon® E5-2687W v3 (14C, 3.1 GHz, Turbo, HT, 25M, 160 W)	
3.	Memory	64 GB 2133 MHz DDR4 RDIMM ECC	
4.	Storage Option	2x500 GB SAS (10 rpm) support hardware RAID 0, 1, 5, 10.	
5.	Graphics	NVIDIA Graphic Quadro card > 4GB chipset compatible (Latest version)	
6.	Network Adapter	1G Ethernet card	
7.	Optical drive	DVD ROM	
8.	Keyboard	USB Traditional Keyboard Black English (EU)	
9.	Mouse	USB Calliope Mouse Black	
10.	Viewing System (method for stereo viewing)	Compatible with graphic card option (Polarized stereo image alternating technology stereoscopic 3D enabling collaborative workflows that dramatically speed up time to insight).	
11.	Supported HW	Must support of required Input and output ports compatibility with other required hardware such as 3D mouse, Key Board, Heat sink fans etc.	
12.	Communications	Intel Gigabit Ethernet controllers with Intel Remote Wake UP, PXE and Jumbo frames support	
13.	Ports	5 slots (5 full length, 1 half length). Two PCIe x16 Gen 3, one PCIe x 16 Gen 3 wired x8 (half length).	
		2 SATA 6Gb/s (for optical drive(s), Rear:3 USB 2.0,3 USB 3.0, 2 PS2,2 RJ45,	
		1 Serial, one PCIe x4 Gen 2; one PCIe x1 Gen 2, one 32bit/33MHz	

14.	Power Supply & cables	Pakistan compatible	
15.	Warranty	01 year on site comprehensive	
16.	Dealership	Authorized Dealership Gold / Higher with manufactural authorization letter	
17.	Operating System	Windows 10 Pro for Workstations 64 English	

MONITOR

SI #	Functions	Specifications	Compliance
1	Brand	ASUS/View Sonic/equal lent	
2	Display units	02x5 screens	
3	Size	Minimum 27" HDMi (stereo viewing NVIDIA Quadro 3D Vision compatible)	
4	Refresh rate	120Hz or more	

Aerial Triangulation licences

Sl. #	Specification/Requirement	Compliance
1.	Support for semi and fully automatic AT without or with POS data (GNSS+ INS integration)	
2.	Provide Image support for digital images with 24 bit or higher (8 bit or higher on each band) uncompressed tiled TIF images with full set of internal overviews.	
3.	The program must be able to calculate shift and drift parameters on the GNSS-data	
4.	The program must be able to correct for earth curvature and atmospheric refraction.	
5.	The program must accommodate tilt, crab and relief in photography to some extent.	
6.	The program must be able to calculate lever arm offsets and bore sight misalignment on the INS/IMU.	
7.	Support for camera self-calibrating parameters	
8.	Support for semi and fully automatic error detection and rectification.	
9.	Supports the coordinate and Datum conversion and customization.	
10.	The program must be able to measure control and check points in the images from signalized known points on the ground.	
11.	The program must be able to export to the project format of the photogrammetric module.	

Modules for Photogrammetric Products and Mapping licences

Sl. #	Specifications/Requirement	Compliance
1.	Photogrammetric software to be able to do 3D-mapping by itself or have integration with other packages like AutoCAD and ArcGIS. Offer must include complete package.	
2.	Support image for 24 bit or higher (8 bit or higher on each band) uncompressed tiled TIF images with full set of internal sequential overviews.	
3.	The software must be able to zoom up to at least 5 times enlargement.	
4.	Must be able to produce line maps from stereo satellite images level 2A (geo-referenced from the satellite image supplier).	
5.	Must be able to carry out additional geo-referencing by use of extra Ground Control Points.	
6.	Support 3D-LED high resolution monitors.	
7.	3D-Mouse that can be used for 3D-mapping	
8.	Supports for coordinate and Datum conversion and customization.	
9.	The software must be able to change the displayed stereo images to get better visibility e.g., dark shadows or low contrast areas. This correction must not introduce any change in the original image on hard drive.	
10.	Must support user defined parameters required for creating line maps.	
11.	Support super imposition of third party vector data for editing with image source.	
12.	Must support these formats: shp, mxd, dxf/dwg, , MIF/MID	
13.	Support all images from either sensor mentioned under specification 2.1 above.	

Digital Orthophoto Production software license

Sl. #	Specifications/Requirement	Compliance
1.	Full support for fully automated, generation and editing of Digital Ortho photo.	
2.	Ortho photo software must support to import files of oriented images and DEM from other sources.	
3.	Must support user defined pixel size for Ortho-rectification.	
4.	The tiling, of the ortho photo must follow regular pattern of a defined width, height and position.	
5.	The program must be able to do some color equalization over the whole project in order that ortho photo becomes more homogeneous.	
6.	The software must be able to zoom up to at least 5 times enlargement for further analysis.	
7.	Provide support for various re-sampling algorithms, for example nearest neighbor, bilinear, cubic convolution, B-spline, etc.	
8.	Support all images from sensors as mentioned under specification 2.1 above.	
9.	Must be able to export metadata, as for example seam lines, to at	

	least one of these formats: shp, mxd, dxf/dwg, , MIF/MID	
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LiDAR Data and DTM Software licenses

SI#	Specification/Requirement	Compliance
1.	Must at least support point cloud these formats: LAS and xyz text. When reading LAS-files form LIDAR the software must be able to read selected classes and given LIDAR pulse return.	
2.	Full support for Point cloud data editing (LAS-format) and should be equally supportive to edit color point clouds.	
3.	The program must be able to make a Digital Terrain Model (DTM) and Contour lines.	
4.	Can support automatic extraction of points with a given class.	
5.	The software must be able to export DEM to at least these formats: ASCII, GEOTIFF, LAS and xyz grid	
6.	The software must be able to export contour lines to at least one of these formats: shp, mxd, dxf/dwg, MIF/MID	
7.	Must support user defined parameters for DEM/DTM generation to achieve high accuracy.	
8.	The software must be able to zoom up to some extent for further analysis.	

TECHNICAL SPECIFICATIONS FOR COMPUTER (BRANDED)

SI #	Functions / Peripherals	Specifications	Compliance
1.	Brand	HP/DELL/Lenovo/IBM etc.	
2.	Processor	Intel Core i7 / i9 10 th Generation or above	
3.	Chipset	Intel H470 Chipset or above	
4.	Memory	64GB, DDR4-3200, Dual Channel Capable with four DIMM slots upgradable to 128GB	
5.	Storage Option	256GB NVME SSD & 1TB 7200rpm SATA Hard Disk Drive	
6.	Graphics	4GB Graphics (NVIDIA Quadro or equivalent)	
7.	Keyboard	USB Keyboard	
8.	Mouse	USB Optical Mouse.	
9.	Communications	Intel Gigabit Ethernet controllers with Intel Remote Wake UP, PXE and Jumbo frames support	
10.	Ports	5 slots (5 full length, 1 half length). Two PCIe x16 Gen 3, one PCIe x 16 Gen 3 wired x8 (half length). 2 SATA 6Gb/s (for optical drive(s), Rear:3 USB 2.0,3 USB 3.0, 2 PS2,2 RJ45, 1 Serial, one PCIe x4 Gen 2; one PCIe x1 Gen 2, one 32bit/33MHz	
11.	Casing	Branded Tower / Mini Tower type with trolley	
12.	Warranty	03 years on site comprehensive	
13.	Dealership	Authorized Dealership Gold / Higher with manufactural authorization letter	

14.	Operating System	Windows 10 Pro (64bit) English	
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Note: Faulty Hard drives will not be return during warranty period.

MONITOR

SI #	Functions	Specifications	Compliance
1	Brand	ASUS / View Sonic or equivalent	
2	Size	27" HDMI	
3	Refresh rate	120 Hz or more	

TECHNICAL SPECIFICATIONS FOR LAPTOP

SI #	Peripherals	Specifications	Compliance
1	Brand	DELL/HP/Lenovo/IBM or equivalent	
2	Processor	Core i7/i9 10th Gen Intel 1.80GHz up to 4.90GHz with Turbo Boost, 4 Cores, 8MB Cache or above all	
3	Memory	8GB DDR4 2666MHz SODIMM single slot	
4	Graphic Card	Integrated Graphics	
5	Hard Drive	256GB SSD for OS & SW + 512GB SSD or higher	
6	Display	14" FHD (1920x1080), IPS, 250nits, Anti-glare, No Touch	
7	connectivity	Wi-Fi and Bluetooth	
8	Ports	USB, USB type C, Audio in out, LAN 01Gbps, SD card Reader, DVI, VGA, etc.	
9	Sensors	Fingerprint Reader	
	Web Cam	HD resolution	
10	Battery	6 Cell Li-Cylinder Internal Battery, 45Wh	
11	Warranty	03 years on site comprehensive	
12	Accessories	Laptop Bag, Charger	
13	Dealership	Authorized Dealership Gold / Higher with manufactural authorization letter	
14	Operating System	Windows 10 Professional English	

Note: Faulty Hard drives will not be return during warranty period.

TECHNICAL EVALUATION QUALIFICATION CRITERIA FOR SURVEYING INSTRUMENT (GNSS) CATEGORY-I

Sl. No.	TENDER SPECIFICATIONS	BIDDER	BIDDER	BIDDER	BIDDER	BIDDER	BIDDER	REMARKS	
		Brand	Brand	Brand	Brand	Brand	Brand		
1	SPECIFICATIONS OF BASE & ROVER RECEIVER	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance		
	a. Triple Frequency GNSS b. Fast Acquisition c. Strong Signal d. Low noise and excellent tracking to low satellite and in adverse conditions e. Fully Independent measurement f. L- Band g. Operation Mode : Each receiver must be capable to operate as base, rover & log static data h. WEB UI Control i. Intelligent Batteries j. Rugged RTK k. Data Update/ Output Rate >10 Hz (20 Hz will be preferred) i. Accuracy with TILT Compensation: RTK, TILT Compensated 15o IMU + E Compass	a. b. c. d. e. f. g. h. i. j. k. l.	a. b. c. d. e. f. g. h. i. j. k. l.	a. b. c. d. e. f. g. h. i. j. k. l.	a. b. c. d. e. f. g. h. i. j. k. l.	a. b. c. d. e. f. g. h. i. j. k. l.	a. b. c. d. e. f. g. h. i. j. k. l.		
	CHANNELS								
	a. Channels more than 440 b. Multi Constellation: Satellite Tracked: GPS, GLONASS, BEIDOU, GALILEO, QZSS, SBAS	a. b.	a. b.	a. b.	a. b.	a. b.	a. b.	a. b.	
	MEMORY								
	a. Internal Memory: 6GB-8GB b. Initialization Time: less than 10 sec	a. b.	a. b.	a. b.	a. b.	a. b.	a. b.	a. b.	
	ACCURACY								
	<u>Accuracy</u> Static and Fast Static mode Horizontal: 3.0 mm +0.1 ppm Vertical: 3.5 mm + 0.4 ppm Real Time Kinematics Horizontal: 8.0 mm+1.0 ppm Vertical: 15.0 mm+1.0 ppm								

ADVANCED COMMUNICATIONS							
a. Radio accessories must be approved by PTA. b. Cellular GSM (NTRIP CASTER), 4G c. Communication: 7 pins and 5 pins interfaces, USB Interface d. Bluetooth Technology e. Wi-Fi f. GSM Network (PTA Approved) g. Internal UHF Radio h. Internal Radio: 1.0-2.0 watt, TX- RX Type i. Battery :3400 mAh j. Operating Temperature -40 to +65 C k. Water Proof / Dust Proof l. Shock Resistance	a. b. c. d. e. f. g. h. i. j. K. l.	a. b. c. d. e. f. g. h. i. j. K. l.	a. b. c. d. e. f. g. h. i. j. K. l.	a. b. c. d. e. f. g. h. i. j. K. l.	a. b. c. d. e. f. g. h. i. j. K. l.	a. b. c. d. e. f. g. h. i. j. K. l.	
FREQUENCY RANGE							
a. Frequency Range: 410-470 Mhz b. Band: GSM/GPRS/EDGE/LETE/UMTS/WCDMA	a. b.	a. b.	a. b.	a. b.	a. b.	a. b.	
ADDITIONAL ACCESSORIES FOR BASE							
a. One set of all cables of base Receiver. b. One Battery set of Base Receiver. c. One set of Base UHF Antenna.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	
ADDITIONAL ACCESSORIES FOR ROVER							
a. One set of all cables of rover receiver. b. One battery set of rover receiver. c. One set of rover UHF antenna.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	

2	SPECIFICATION OF CONTROLLER							
	<p>a. Rugged Digital Tablet Controller</p> <p>b. Interactive CAD function which can do simple Draw, Edit, Manage field data without the needs to use office CAD software.</p> <p>c. Able to work with 4x different view mode : Classic 2D, 3D with Elevation, Map View (i.e Google Map as background), able to support Raster Image (Tiff, JPG, Bitmap).</p> <p>d. Can Import directly the following format into field controller : DXF/DWG file, ASCII file, ESRI Shapefile, LandXML format, Raster Image, BIM IFC file, GSI format, Google KML/KMZ format (export</p> <p>e. Can Export directly the following format to PC: DXF/DWG file, ASCII file, ESRI Shapefile, LandXML format, GSI format, Google KML/KMZ format, STARNET format, 12D format, LSS DTM format</p> <p>f. Generate Stakeout report directly from the field software</p> <p>g. Online data sharing capability : WhatsApp, Dropbox, Google Drive, Email, Skype etc (no physical hard drive needed for data transfer)</p> <p>h. Faster QC and checking purpose between Field and office to avoid error and repetitive work.</p> <p>i. RTK Correction</p> <p>j. Gyroscope, electronic Compass, Accelerometer, Electronic Bubble, GSM, Bluetooth, Wi-Fi</p> <p>k. Digital Compass</p> <p>l. Not less than 8 MP Embedded Camera</p> <p>m. Operating Software : Windows / Android</p> <p>n. Radio configuration : Add, Delete and Edit of Radio frequencies in field via Field controller</p> <p>o. Transformation Calculator: Field software capability to compute new transformation parameters</p> <p>p. Processor: not less than 1.1 GZ Intel Atom</p> <p>q. RAM: Greater than 2 GB</p> <p>r. ROM : Not less than 8 GB</p> <p>s. Interface: TF Slot, USB,GSM,</p> <p>t. Display: not less than 7" capacitive touch panel, sunlight-viewable.</p>	<p>a.</p> <p>b.</p> <p>c.</p> <p>d.</p> <p>e.</p> <p>f.</p> <p>g.</p> <p>h.</p> <p>i.</p> <p>j.</p> <p>k.</p> <p>l.</p> <p>m.</p> <p>n.</p> <p>o.</p> <p>p.</p> <p>q.</p> <p>r.</p> <p>s.</p> <p>t.</p>	<p>a.</p> <p>b.</p> <p>c.</p> <p>d.</p> <p>e.</p> <p>f.</p> <p>g.</p> <p>h.</p> <p>i.</p> <p>j.</p> <p>k.</p> <p>l.</p> <p>m.</p> <p>n.</p> <p>o.</p> <p>p.</p> <p>q.</p> <p>r.</p> <p>s.</p> <p>t.</p>	<p>a.</p> <p>b.</p> <p>c.</p> <p>d.</p> <p>e.</p> <p>f.</p> <p>g.</p> <p>h.</p> <p>i.</p> <p>j.</p> <p>k.</p> <p>l.</p> <p>m.</p> <p>n.</p> <p>o.</p> <p>p.</p> <p>q.</p> <p>r.</p> <p>s.</p> <p>t.</p>	<p>a.</p> <p>b.</p> <p>c.</p> <p>d.</p> <p>e.</p> <p>f.</p> <p>g.</p> <p>h.</p> <p>i.</p> <p>j.</p> <p>k.</p> <p>l.</p> <p>m.</p> <p>n.</p> <p>o.</p> <p>p.</p> <p>q.</p> <p>r.</p> <p>s.</p> <p>t.</p>	<p>a.</p> <p>b.</p> <p>c.</p> <p>d.</p> <p>e.</p> <p>f.</p> <p>g.</p> <p>h.</p> <p>i.</p> <p>j.</p> <p>k.</p> <p>l.</p> <p>m.</p> <p>n.</p> <p>o.</p> <p>p.</p> <p>q.</p> <p>r.</p> <p>s.</p> <p>t.</p>	<p>a.</p> <p>b.</p> <p>c.</p> <p>d.</p> <p>e.</p> <p>f.</p> <p>g.</p> <p>h.</p> <p>i.</p> <p>j.</p> <p>k.</p> <p>l.</p> <p>m.</p> <p>n.</p> <p>o.</p> <p>p.</p> <p>q.</p> <p>r.</p> <p>s.</p> <p>t.</p>	

3	FEATURES OF SOFTWARE							
	Data processing software Latest version user friendly full module comprehensive software with permanent license.							
	Specifications a. Having utility for post processing data. b. Import & export all GPS data. c. Import and export RINEX, ASCII, CAD (DWG, DXF), GIS (Shp.File). d. Data error and accuracy reporting. e. Datum shift calculation. f. Downloading and processing adjustment g. Software must be capable of GNSS, Total Station and level data processing and adjustment and all functions should be operational with complete license. h. Image Processing Modules enable you to process images and generate point clouds and 3D surfaces quickly and accurately. i. For tasks like measuring a complex building, the modules allow you to process mixed photos, aerial and terrestrial simultaneously, in a single step, to achieve best results in highest quality. j. The results are fully integrated into the main applications enabling to create final drawings, maps and surfaces. k. Specific drawing utilities such as the Solid Orthophoto view and the possibility to select the coordinates in the original photos, ensure to get the most out of the calculated results.	a. b. c. d. e. f. g. h. i. j. k.	a. b. c. d. e. f. g. h. i. j. k.	a. b. c. d. e. f. g. h. i. j. k.	a. b. c. d. e. f. g. h. i. j. k.	a. b. c. d. e. f. g. h. i. j. k.		
4	Training Training for operation and preventive maintenance of equipment (Hardware and software) for 02 weeks free of charge.							
5	Warranty One year after commission on site, defective parts/assemblies will be replaced by the bidder free of charge within warranty period							

TECHNICAL EVALUATION QUALIFICATION CRITERIA FOR SURVEYING INSTRUMENT (TOTAL STATION)

S. No.	TENDER SPECIFICATIONS	BIDDER	BIDDER	BIDDER	BIDDER	BIDDER	BIDDER	REMARKS
		Brand	Brand	Brand	Brand	Brand	Brand	
	SPECIFICATIONS OF TOTAL STATION	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance	
1	TELESCOPE							
	a. Image Erect b. Magnification 30X c. Field of View 1° 30'-1° 25' d. Focusing Range 2.0 m to infinity e. Resolving Power ≤ 3"	a. b. c. d. e.	a. b. c. d. e.	a. b. c. d. e.	a. b. c. d. e.	a. b. c. d. e.	a. b. c. d. e.	
2	ANGLE MEASUREMENT							
	a. Tilt compensation method dual axis b. Tilt compensation range ≥3" c. Angle accuracy ≤2" d. Displayed resolution less than 1"	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	
3	DISTANCE MEASUREMENT							
	a. Range with reflector ≥5000m with 1 prism b. Range without reflector 600-800m c. EDM accuracy ≤ (2mm+ 2ppm) of distance d. Measuring time Fine: ≤ 1.0s (initial 1.5s) Rapid: ≤ 0.6s (Initial 1.3s) Tracking: ≤ 0.4s (Initial 1.3s)	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	
4	OPTICAL PLUMMET							
	a. Magnification ≥2.2x b. Focusing Range 0.5m to infinity c. Level Plate/tubular Bubble Vial 30 seconds per division/ (2 mm) Circular Bubble Vial 10 minutes per division/ (2 mm) d. Laser Red laser Diode, Beam Accuracy <= 1.0mm @ 1.3m	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	

5	KEYBOARD AND DISPLAY							
	a. Control Panel Location On Dual face b. Display Dual Coloured Touch Screen display c. Graphics 320x240 pixels (Q VGA) d. Interface windows e. Key and display illumination f. 5 Brightness level	a. b. c. d. e. f.	a. b. c. d. e. f.	a. b. c. d. e. f.	a. b. c. d. e. f.	a. b. c. d. e. f.	a. b. c. d. e. f.	
6	APPLICATION PROGRAM							
	a. Topographic Observations b. Route Surveying c. Resection d. Offset Measurement e. Missing Line/RDM f. Surface Area Calculation g. Point to Line h. 3D Coordinate measurement i. Remote Elevation Measurement j. Stake Out k. Intersection	a. b. c. d. e. f. G. h. i. j. k.	a. b. c. d. e. f. G. h. i. j. k.	a. b. c. d. e. f. G. h. i. j. k.	a. b. c. d. e. f. G. h. i. j. k.	a. b. c. d. e. f. G. h. i. j. k.		
7	SPECIAL REQUIREMENTS							
	a. Certificate of origin: From manufacturer with every equipment in box b. Certificate from chamber of commerce: Certificate from Chamber of Commerce with serial Number of Total Stations shipped against this order from place of shipment	a. b.	a. b.	a. b.	a. b.	a. b.	a. b.	
8	DATA STORAGE							
	a. Capacity ≥50,000 points on board b. Data formats GSI/DXF/LANDXML/CSV/user definable ASCII formats c. Interface USB, Serial	a. b. c.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	
9	FOCUSING MODE							
	a. Manual focus mode	a.	a.	a.	a.	a.	a.	

10	PHYSICAL							
	a. Weight ≤10 kg b. Temperature range ≤0° C to ≥50° C fully operational c. Humidity 0 to ≥90% RH d. Protection splash waterproof dustproof	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	
11	POWER							
	a. Batteries LI-ion rechargeable Dual battery slots for protecting memory during changing of batteries b. Capacity Continuous angle-only measurement: 12 h Distance/angle measurement/ AF every 30 s c. Recharge time 6 hours	a. b. c.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	a. b. c.	
12	Training							
	Training for operation and preventive maintenance of equipment (Hardware and software) for 02 weeks free of charge.							
13	Warranty							
	One year after commission on site, defective parts/assemblies will be replaced by the bidder free of charge within warranty period							

Evaluation Criteria Proforma B

PERFORMA FOR TECHNICAL EVALUATION OF TOTAL STATION ON PHYSICAL INSPECTION AND FIELD DEMONSTRATION

Bidder/ Equipment/ Brand	General (20 Marks)			OEM/Authorized Agent Experience (15 Marks)			After sale services/ Workshop (20 Marks)			Performance (45 Marks)						Total (100 Marks)	
	User Interface (5 Marks)	Build Quality (Rugged/ Non- Rugged (5 Marks)	Quality Standards of Accessories (10 Marks)	5-8 years (5 Marks)	9-12 years (10 Marks)	13-15 years (15 Marks)	Within Pakistan (10 Marks) Outside Pakistan (05 Marks)	Qualified staff (5 Marks)	Repairing Lab (5 Marks)	Range with Prism (5 Marks)	Range With Laser (5 Marks)	Stakeout (5 Marks)	H & V Accuracy (10 Marks)	Observation Time (5 Marks)	Processing Software (15 Marks)		Score
															User Interface (5 Marks)	Downloading & Processing (10 Marks)	
A																	
B																	
C																	
D																	
E																	

PROFORMA FOR TECHNICAL EVALUATION OF GNSS ON PHYSICAL INSPECTION AND FIELD DEMONSTRATION

Bidder/ Equipment / Brand	General (25 Marks)				OEM/Authorized Agent Experience (15 Marks)			After sale services/ Workshop (20 Marks)			Performance (40 Marks)						Total (100 Marks)	
	Receiver Controller (10 Marks)		Build Quality of receiver/ Controller (Rugged/Non -Rugged (5 Marks)	Quality Standards of Accessories (10 Marks)	5-8 years (5 Marks)	8-12 years (10 Marks)	13-15 years (15 Marks)	Within Pakistan (10 Marks) Outside Pakistan (05 Marks)	Qualified staff (5 Marks)	Repairing Lab (5 Marks)	Static DGNSS (5 Marks)	RTK DGNSS (5 Marks)	Layout (5 Marks)	H & V Accuracy (5 Marks)	Radio Connectivity /Range/ Coverage (10 Marks)	Processing Software (10 Marks)		Score
	User Interface (5 Marks)	Connectivity with Receiver (5 Marks)														User Interface (5 Marks)	Downlo ading & Process ing (5 Marks)	
A																		
B																		
C																		
D																		
E																		

TECHNICAL EVALUATION GRADING CRITERIA FOR IT Equipment

Sl. No.	SPECIFICATIONS OF DIGITAL TABLETs			
	Functions / Peripherals	Tender Specifications		
1	Processor	Intel® Core™ i7-8565U Processor 1.8GHz Max. 4.6GHz with Intel® Turbo Boost Technology 8MB Intel® Smart Cache		
2	Memory	RAM: 8 GB or more., Internal Storage: 512 GB, SSD, Card Slot: UHS-II or above		
3	Sound	2 x Rear-Facing Speakers, Dolby® Atmos™, Micro USB / Audio Jack		
4	Battery	Type: Min Li-ion 7000 mAh or above, Embedded, Standby Time: Up to 117 Days, Usage Time: Up to 10 Hours		
5	Power Device	Normal Voltage AC 120/230 v, Frequency Required 50/60 Hz		
6	Display	11.6" IPS TFT LCD FHD (1920 x 1080), 800nits Lumi Bond® display with Getac sunlight, readable technology, Capacitive multi-touch screen		
7	SIM	Type: Micro Sim Card (LTE SKU only), Slots: Single		
8	Communications	Intel Gigabit Ethernet controllers		
9	4G Network	PRC: B1/3/40/41, ROW: B1/3/7/8/20		
10	4 & 3G Network	UMTS: B1/2/5/8		
11	2G Network	GSM : B2/3/5/8		
12	WLAN	2.4 GHz 802.11 b/g/n		
13	Bluetooth®	Bluetooth® 4.0		
14	NFC	Yes		
15	FM Receiver	Standard		
16	GPS Support	Max Satellite connectivity for maximum accuracy		
17	3.5 mm Audio Jack	Standard		
18	Integrated Camera	Rear: 13 MP full HD 1080p60fps Auto-focus, Front: 5 MP Fixed-focus		
19	Sensors	G-Sensor, Vibration		
20	Accessories	Pen, Extra battery for Power backup, Car charger, Cover, screen protector		
21	Protection	Shock and water proof		
22	Warranty	03 years on site comprehensive		
23	Dealership	Authorized Dealership Gold / Higher with manufactural authorization letter		
24	Operating System	Windows 10 Pro for Workstations 64 English		

TECHNICAL EVALUATION GRADING CRITERIA FOR IT Equipment

SPECIFICATIONS OF PHOTOGRAMMETRIC WORKSTATION (Photogrammetric Data Processing)					
Sl. No.	Functions / Peripherals	Tender Specifications			
1	Processor	2xIntel® Xeon® E5-2687W v3 (14C, 3.1 GHz, Turbo, HT, 25M, 160 W)			
2	Memory	64 GB 2133 MHz DDR4 RDIMM ECC			
3	Storage Option	2x500 GB SAS (10 rpm) support hardware RAID 0, 1, 5, 10.			
4	Graphics	NVIDIA Graphic Quadro card > 4GB chipset compatible (Latest version)			
5	Network Adapter	1G Ethernet card			
6	Optical drive	DVD ROM			
7	Keyboard	USB Traditional Keyboard Black English (EU)			
8	Mouse	USB Calliope Mouse Black			
9	Viewing System (method for stereo viewing)	Compatible with graphic card option (Polarized stereo image alternating technology stereoscopic 3D enabling collaborative workflows that dramatically speed up time to insight).			
10	Supported HW	Must support of required Input and output ports compatibility with other required hardware such as 3D mouse, Key Board, Heat sink fans etc.			
11	Communications	Intel Gigabit Ethernet controllers with Intel Remote Wake UP, PXE and Jumbo frames support			
12	Ports	5 slots (5 full length, 1 half length). Two PCIe x16 Gen 3, one PCIe x 16 Gen 3 wired x8 (half length). 2 SATA 6Gb/s (for optical drive(s), Rear:3 USB 2.0,3 USB 3.0, 2 PS2,2 RJ45, 1 Serial, one PCIe x4 Gen 2; one PCIe x1 Gen 2, one 32bit/33MHz			
13	Power Supply & cables	Pakistan compatible			
14	Warranty	01 year on site comprehensive			
15	Dealership	Authorized Dealership Gold / Higher with manufactural authorization letter			
16	Operating System	Windows 10 Pro for Workstations 64 English			

TECHNICAL EVALUATION GRADING CRITERIA FOR IT Equipment

Sl. No	SPECIFICATIONS OF COMPUTER BRANDED			Compliance
	Functions / Peripherals	Tender Specifications		
1	Brand	HP/DELL/Lenovo/IBM etc.		
2	Processor	Intel Core i7 / i9 10th Generation or above		
3	Chipset	Intel H470 Chipset or above		
4	Memory	64GB, DDR4-3200, Dual Channel Capable with four DIMM slots upgradable to 128GB		
5	Storage Option	256GB NVME SSD & 1TB 7200rpm SATA Hard Disk Drive		
6	Graphics	4GB Graphics (NVIDIA Quadro or equivalent)		
7	Keyboard	USB Keyboard		
8	Mouse	USB Optical Mouse.		
9	Communications	Intel Gigabit Ethernet controllers with Intel Remote Wake UP, PXE and Jumbo frames support		
10	Ports	5 slots (5 full length, 1 half length). Two PCIe x16 Gen 3, one PCIe x 16 Gen 3 wired x8 (half length). 2 SATA 6Gb/s (for optical drive(s), Rear:3 USB 2.0,3 USB 3.0, 2 PS2,2 RJ45, 1 Serial, one PCIe x4 Gen 2; one PCIe x1 Gen 2, one 32bit/33MHz		
11	Casing	Branded Tower / Mini Tower type with trolley		
12	Warranty	03 years on site comprehensive		
13	Dealership	Authorized Dealership Gold / Higher with manufactural authorization letter		
14	Operating System	Windows 10 Pro (64bit) English		

TECHNICAL EVALUATION GRADING CRITERIA FOR IT Equipment

Sl. No.	SPECIFICATIONS OF LAPTOP				
	Functions / Peripherals	Tender Specifications	Compliance		
1	Brand	DELL/HP/Lenovo/IBM or equivalent			
2	Processor	Core i7/i9 10th Gen Intel 1.80GHz up to 4.90GHz with Turbo Boost, 4 Cores, 8MB Cache or above all			
3	Memory	8GB DDR4 2666MHz SODIMM single slot			
4	Graphic Card	Integrated Graphics			
5	Hard Drive	256GB SSD for OS & SW + 512GB SSD or higher			
6	Display	14" FHD (1920x1080), IPS, 250nits, Anti-glare, No Touch			
7	connectivity	Wi-Fi and Bluetooth			
8	Ports	USB, USB type C, Audio in out, LAN 01Gbps, SD card Reader, DVI, VGA, etc.			
9	Sensors	Fingerprint Reader			
10	Web Cam	HD resolution			
11	Battery	6 Cell Li-Cylinder Internal Battery, 45Wh			
12	Warranty	03 years on site comprehensive			
13	Accessories	Laptop Bag, Charger			
14	Dealership	Authorized Dealership Gold / Higher with manufactural authorization letter			
15	Operating System	Windows 10 Professional English			

PROFORMA FOR TECHNICAL EVALUATION OF IT EQUIPMENT

DIGITAL TABLETs

Bidder/Firms	OEM/Authorized Agent Experience (30 Marks)			After sale services/ Workshop (30 Marks)			Brand/Performance (40 Marks)	Total (100 Marks)
	5-8 years (10 Marks)	9-12 years (20 Marks)	13-15 years (30 Marks)	Within Pakistan (10 Marks) or Outside Pakistan (5 Marks)	Qualified staff (15 Marks)	Repairing Lab (5 Marks)		Score
A								
B								
C								
D								
E								

PROFORMA FOR TECHNICAL EVALUATION OF IT EQUIPMENT

Photogrammetric WORKSTATION (Photogrammetric Data Processing)

Bidder/Firms	OEM/Authorized Agent Experience (30 Marks)			After sale services/ Workshop (30 Marks)			Brand/Performance (40 Marks)	Total (100 Marks)
	5-8 years (10 Marks)	9-12 years (20 Marks)	13-15 years (30 Marks)	Within Pakistan (10 Marks) or Outside Pakistan (5 Marks)	Qualified staff (15 Marks)	Repairing Lab (5 Marks)		Score
A								
B								
C								
D								
E								

PROFORMA FOR TECHNICAL EVALUATION OF IT EQUIPMENT

COMPUTER BRANDED

Bidder/Firms	OEM/Authorized Agent Experience (30 Marks)			After sale services/ Workshop (30 Marks)			Brand/Performance (40 Marks)	Total (100 Marks)
	5-8 years (10 Marks)	9-12 years (20 Marks)	13-15 years (30 Marks)	Within Pakistan (10 Marks) or Outside Pakistan (5 Marks)	Qualified staff (15 Marks)	Repairing Lab (5 Marks)		Score
A								
B								
C								
D								
E								

PROFORMA FOR TECHNICAL EVALUATION OF IT EQUIPMENT

LAPTOP

Bidder/Firms	OEM/Authorized Agent Experience (30 Marks)			After sale services/ Workshop (30 Marks)			Brand/Performance (40 Marks)	Total (100 Marks)
	5-8 years (10 Marks)	9-12 years (20 Marks)	13-15 years (30 Marks)	Within Pakistan (10 Marks) or Outside Pakistan (5 Marks)	Qualified staff (15 Marks)	Repairing Lab (5 Marks)		Score
A								
B								
C								
D								
E								